

**MEMORANDUM**

February 1, 2007

TO: Management and Fiscal Policy Committee

FROM: Amanda M. Mihill, Legislative Analyst *AMM*

SUBJECT: Quarterly Review - Comcast, RCN, and Verizon Customer Service

The Management and Fiscal Policy (MFP) Committee is holding this worksession to review customer service performance for Comcast Cable Communications, RCN, and Verizon Communications to ensure that performance measures established by the County's franchise agreements are being attained. This memorandum includes an evaluation of customer service performance for the fourth quarter of 2006 and a review of additional issues that have emerged during this period. The Committee should note that Verizon will begin providing compliance reports next quarter. Therefore, the focus of this memorandum is on Comcast and RCN.

As part of the County's Department of Technology Services, the Office of Cable and Communications Services (hereinafter "Cable Office") continually monitors customer service data for Comcast, RCN, and Verizon. The Cable Office staff actively works with company representatives to resolve a variety of issues. Jane Lawton, Cable Communications Administrator, will attend the Committee worksession to provide information on these ongoing efforts. Representatives from Comcast, RCN, and Verizon are expected to attend the worksession.

**I. Customer Service Guidelines**

**A. Cable Television Guidelines**

Pursuant to the 1992 Cable Television Consumer Protection and Competition Act, the Federal Communications Commission (FCC) adopted guidelines for improving the quality of customer service provided by cable operators. During the last ten years, FCC standards have become boilerplate language in most local cable franchise agreements, including the County's agreements with Comcast and RCN. These agreements establish numerical standards for minimum customer service requirements that are virtually identical to FCC standards. The franchise agreement with Verizon has similar standards, but the language is not identical to the language in the County's franchise agreements with Comcast and RCN.

The following is a summary of the FCC standards that are part of the County's franchise agreements (© 1 to 2). Although Comcast and RCN are required to provide monthly reporting numbers, their performance is measured quarterly to determine compliance. A violation of these minimum customer service standards may result in fines being levied against a franchisee.

### **1. Subscriber Calls to a Cable System**

Unless otherwise noted, the following requirements must be met 90 percent of the time, measured quarterly, under normal operating conditions. In the County's franchise agreements normal operating conditions are defined as, "those service conditions which are within the control of the cable operator." These conditions include special promotions, pay-per-view events, rate increases, regular peak or seasonal demand periods, and maintenance or rebuild of the cable system.

1. Each cable system must maintain a local, toll-free, or collect-call telephone line that must be available 24 hours a day, seven days a week.
2. Company representatives must be available to respond to customer inquiries during normal business hours, which is defined as the hours during which most similar businesses in the community are open to serve customers.
3. After normal business hours, the cable system may use an answering service or machine, so long as messages are responded to the next business day.
4. A call to a cable system must be answered (including the length of time the caller is put on hold) within 30 seconds after the connection is made. If the call is transferred, the transfer time may not exceed an additional 30 seconds.
5. Cable system customers may receive a busy signal no more than three percent of the time.
6. Although no special equipment is required to measure telephone answering and hold times, cable operators should use their best efforts in documenting compliance.

### **2. Installations, Service Interruptions, and Service Calls**

The following requirements for installations, outages, and service calls must ordinarily be met at least 95 percent of the time, measured quarterly, under normal operating conditions.

1. Federal guidelines state that standard installations, which are those located up to 125 feet from the existing distribution system, must be performed within seven days after an order has been placed.
2. Except in situations beyond their control, cable operators must begin work on a service interruption no later than 24 hours after being notified of the problem. A service interruption has occurred if the picture or sound on one or more channels has been lost.

3. Cable operators must begin to correct other service problems the next business day.
4. Cable operators may schedule appointments for installations and other service calls either at a specific time or, at a maximum, within a four-hour time period during normal business hours.
5. Cable operators may also schedule service calls outside of normal business hours for the convenience of the customer.
6. No appointment cancellations are permitted after the close of business on the business day prior to the scheduled appointment. If the cable installer or technician is running late, and will not meet the specified appointment time, he or she must contact the customer and reschedule the appointment at the convenience of the subscriber.

#### **B. Cable Modem Service Standards**

As required by Executive Regulation 26-03AMII, Cable Modem Service Standards, September 2004 was the first month both companies were required to provide the County with customer service data related to high-speed internet service. Both companies are now providing customer service information for high-speed data service to the Cable Office. The franchise agreements require the following:

1. Calls must be answered in 30 seconds at least 75 percent of the time.
2. Calls must receive a customer account executive (CAE) connection within 60 seconds at least 75 percent of the time.
3. Repairs must be performed in 36 hours at least 95 percent of the time.
4. Installations must be performed in 7 days at least 95 percent of the time.

On October 17, 2006, the Council passed Expedited Bill 41-06, Consumer Protection – Internet Access, which prohibits certain merchants from engaging in unfair trade practices with respect to internet access. This legislation effectively transfers regulation of internet access service from the County's cable law to the consumer protection law. It also authorizes the Executive to adopt minimum internet access service standards by regulation, which will replace the cable modem service regulations. The County Executive submitted those regulations to the Council on January 30, 2007.

#### **II. Customer Service Performance**

As noted above, Verizon has not yet begun providing compliance reports to the County. Verizon is scheduled to provide reports beginning next quarter.

## A. Comcast Summary

### 1. Video Customer Service Performance

At the last MFP meeting on customer service, Comcast had not provided customer service numbers for the month of September, so at that time, it was impossible for Council staff to determine if the company was in compliance for the third quarter of 2006. Since the last Committee meeting, Comcast has provided complete third quarter data that shows Comcast was out of compliance in the third quarter for all customer service categories associated with cable service. Comcast indicates that the particularly low compliance numbers for September are due to residual effects from atypical events including a weather-related power outage, computer virus, and channel changes.

For the fourth quarter of 2006, Comcast's December data has not been provided to the Cable Office, so it is impossible to determine if the company complies with the customer service standards for the October through December time frame for cable service. This information is provided in Table 1 below. Comcast has indicated that the company has made several changes designed to improve customer service. **The Committee may wish to discuss these changes with Comcast representatives.**

At the last MFP meeting, the Cable Office noted that Comcast was assessed \$1,228 in liquidated damages, which Comcast paid. Since Comcast was unable to come back into compliance for the September through November time frame, the company has been assessed liquidated damages in the amount of \$12,281.84.

**TABLE 1: Customer Service Summary Information Provided by Comcast for Video  
January – December 2006**

Category of Service	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Percentage of calls answered in 30 seconds (90% required by franchise agreement)	86	91	86	83	90	80	76	69	36	85	80	*
Percentage of calls receiving a CAE connection within 60 seconds (90% required by franchise agreement)	84	91	85	82	92	82	78	76	45	85	76	*
Percentage of repairs performed within 24 hours (95% required by franchise agreement)	85	92	95	91	98	97	93	94	83	88	94	*
Percentage of installations performed in 7 days (95% required by franchise agreement)	98	98	98	97	100	96	71	90	98	100	100	*

\* Data has not been provided.

## 2. Cable Modem Customer Service Performance

At the last MFP customer service briefing, Comcast had not provided customer service numbers for the month of September, so at that time, it was impossible for Council staff to determine if the company was in compliance for the third quarter of 2006 for cable modem service. Since the last Committee meeting, Comcast has provided complete third quarter data that shows Comcast was out of compliance for all customer service categories associated with cable modem service. At the time this packet went to print, Comcast had not provided customer service information for high-speed data service to the Cable Office for December 2006. Therefore, it is impossible to determine if the company is in compliance with the customer service standards for the October through December time frame for either internet service.

### B. RCN Summary

#### 1. Video Customer Service Performance

In the fourth quarter of 2006, RCN was in compliance for all customer service categories associated with cable service. This information is provided in Table 2 below. The Cable Office warned RCN about earlier compliance issues and RCN was able to come back into compliance before the Cable Office assessed liquidated damages.

**TABLE 2: Customer Service Summary Information Provided by RCN for Video  
January – December 2006**

Category of Service	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Percentage of calls answered in 30 seconds (90% required by franchise agreement)	99	99	99	98	98	98	56	67	82	97	97	97
Percentage of calls receiving a CAE connection within 60 seconds (90% required by franchise agreement)	79	84	77	83	76	51	61	73	92	93	85	92
Percentage of repairs performed within 24 hours (95% required by franchise agreement)	98	97	98	98	98	97	95	95	95	97	98	97
Percentage of installations performed in 7 days (95% required by franchise agreement)	100	100	100	100	100	100	100	100	100	100	100	100

## 2. Cable Modem Customer Service Performance

As far as cable modem service standards are concerned, RCN is in compliance for the fourth quarter of 2006 for all customer service categories.

## C. Office of Cable and Communications Services Summary of Complaints

### 1. Comcast

In the fourth quarter, the Cable Office received 282 complaints for Comcast, which is down 44 percent from the third quarter of 2006. The majority of calls are for service (68%), reception (38%), and cable modem (31%) (© 11). As noted above, Comcast reports that there were several unusual events in September that may have affected customer service performance in the third quarter. These unusual events may account for the significant drop in complaints reported by the Cable Office.

### 2. RCN

The Cable Office received 16 complaints from RCN customers in the fourth quarter of 2006, which is nearly double from the third quarter of 2006 and one complaint higher than the second quarter (© 12). The majority of these complaints are for service (44%), billing (38%), and reception (31%). RCN has only a fraction of the customers that Comcast serves. **The Committee may wish to ask RCN to address the increase of complaints in the fourth quarter.**

The Committee should note that none of the complaint numbers provided in Table 3 below include calls from subscribers about cable rates.

**TABLE 3: Customer Service Complaints to the Office of Cable and Communications Services  
January-December (© 11 to 12)**

Issue Category	Comcast Complaints	RCN Complaints
Billing	330	28
Service	1,016	12
VoIP Service	38	1
Cable Modem	425	9
Telephone	128	9
Reception	521	6
Construction	30	0
Marketing	32	4
Installation	93	0
Serviceability	14	0
Cable Line Related	248	3
Other	90	4
Total Issues Generated *	2,965	76
<b>Total Complaints</b>	<b>1,438</b>	<b>53</b>

\* This total includes multiple complaints covering different issues filed by the same customer.

### 3. Verizon

The Cable Office did not receive any complaints from Verizon customers in the fourth quarter.

## **D. Construction Violations**

### **1. Comcast**

During the fourth quarter of 2006, Columbia Telecommunications Corporation (CTC) reported 2,298 Comcast violations, which is a 6 percent decrease from the last quarter (© 6 and 18). This information is provided in Table 4 on page 8. At the end of the fourth quarter, CTC reported that 1,447 violations (63%) remain uncured (© 18).

During the fourth quarter, CTC inspected areas where the system rebuild was completed years ago and general inspection had not been performed lately. In these areas, there have been many changes to the aerial plant, subscriber drops, and supporting utility poles that have resulted in 23 percent of the total fourth quarter violations. These problems included relocating cable to new poles so the old poles can be removed, properly securing coils of plant expansion cables that have fallen, removing unused drop cables that dangle from the poles or strand, replacing broken guy wires or installing missing guy wires where needed, and burying exposed temporary underground cables in the rights-of-way. Eighteen percent of total fourth quarter violations were for clearance issues, which are usually addressed by working with the owners of the other cables on the poles to determine what cables need to be moved to meet standards for attachment to the satisfaction of the pole owner. Other violations included grounding related problems on the mainline plant (10 percent) and locations where cables were falling away from their supporting strand. Drop related problems account for nearly 30 percent of fourth quarter violations (see © 18 and 19). Comcast reported that all outstanding violations from the third quarter have been corrected.

CTC also reported 19 inspection alerts in the fourth quarter, a 58 percent increase from the third quarter. Comcast corrected 16 of those violations by the end of the quarter and report that the company has fixed all outstanding alerts from the third quarter (© 21 to 22).

Based on CTC's re-inspection of violations reported corrected during the fourth quarter, CTC found that approximately 80 percent were not corrected as reported. This percentage exceeds the benchmark of 10 percent and is an increase from the 11 percent CTC reported for the second quarter (© 6 and 22).

**Council staff questions: Why are 63 percent of construction violations reported in 2006 still outstanding? What is the status of correcting outstanding violations? Why does Comcast's re-inspection rate continue to increase? What steps are being taken to remedy these issues?**

**TABLE 4: Construction Inspection Summary—Reported Violations for Comcast  
1st Quarter 2005 – 4th Quarter 2006**

<b>Type of Problem</b>	<b>2005 1st Quarter</b>	<b>2005 2nd Quarter</b>	<b>2005 3rd Quarter</b>	<b>2005 4th Quarter</b>	<b>2006 1st Quarter</b>	<b>2006 2nd Quarter</b>	<b>2006 3rd Quarter</b>	<b>2006 4th Quarter</b>
<b>Construction</b>	753	736	566	370	1,013	1,460	1,720	1,364
<b>Design</b>	248	170	140	219	0	0	0	0
<b>Equipment</b>	123	173	193	201	242	48	49	75
<b>Restoration</b>	37	336	260	209	56	58	123	179
<b>Subscriber Drops</b>	339	485	440	630	839	633	558	680
<b>Totals</b>	<b>1,500</b>	<b>1,900</b>	<b>1,599</b>	<b>1,629</b>	<b>2,150</b>	<b>2,119</b>	<b>2,450</b>	<b>2,298</b>

(Note: Data compiled from CTC's Testing and Inspection Reports.)

## 2. RCN

During the third quarter of 2006, CTC reported 526 RCN violations, approximately 34 percent less than the last quarter (© 7 and 26). This information is provided in Table 5 on page 9. Approximately one-third of the plant problems cited were for locations where tree guards are required. The majority of the remaining items reported included other mainline cable construction violations such as pole guying problems where guy wires were broken and not installed, bonding and grounding issues, and clearance with other telecommunications cables on the poles. Problems with subscriber drops accounted for 10 percent of the total violations. The majority of these violations were for improper grounding of the drop cables, unused drop cables dangling from the strand at the pole that required removal, and drop cables that needed to be properly secured to the pole (© 26 to 27). As of the end of the fourth quarter, RCN reported that they have only fixed 304 (13%) of the 2,418 violations reported as of the end of the fourth quarter in 2006 (© 7 and 27).

CTC also reported two inspection alerts in the fourth quarter. Comcast corrected one of those violations by the end of the quarter and report that the company has not reported correction of two alerts reported for repair during the third quarter (© 27).

Also in the fourth quarter, CTC re-inspected 1,123 violations from the second and third quarters. CTC found that 54 percent had not been corrected. This is an increase from the third quarter when 47 percent of reported violations had not been repaired (© 27).

**Council staff questions: Why are 87 percent of the construction violations reported in 2006 still outstanding? What is the status of correcting these violations? Why does RCN's re-inspection rate continue to increase? What steps are being taken to remedy these issues?**



**TABLE 5: Construction Inspection Summary—Reported Violations for RCN  
1st Quarter 2005 – 4th Quarter 2006**

Type of Problem	2005 1st Quarter	2005 2nd Quarter	2005 3rd Quarter	2005* 4th Quarter	2006 1st Quarter	2006 2nd Quarter	2006 3rd Quarter	2006 4th Quarter
Construction	176	111	56	7	393	655	724	470
Design	85	246	2	0	0	0	0	0
Equipment	4	4	1	0	0	0	0	1
Restoration	0	0	0	0	0	0	0	0
Subscriber Drops	31	14	10	1	85	60	76	55
<b>Totals</b>	<b>296</b>	<b>375</b>	<b>69</b>	<b>8</b>	<b>478</b>	<b>715</b>	<b>800</b>	<b>526</b>

### **III. Other Issues**

#### **A. Comcast Video Reception/Service**

At the last MFP meeting, the Committee discussed the complaints the Cable Office received about TV programming that would “tile”. This occurs when the picture “freezes up” for a few moments and then normal picture quality resumes. CTC concluded that it appears many of the problems were reported from areas of the system that had been converted to enable delivery of all-digital signals to subscribers who have digital equipment capable of receiving those services. CTC suggests drop replacement as a first line of action, followed by Comcast dispatching a service technician to the subscriber. Although the Cable Office has received fewer complaints about these pixilation effects in December than in October and November, CTC recommends the County and Comcast institute policies that require drop replacement at the time Comcast converts a subscriber to all-digital programming (© 3 to 4 and 20 to 21).

#### **B. Cable and High-Speed Internet and Institutional Network (I-NET) Requests**

Under the County’s franchise agreement with Comcast, the company is required to connect and provide service to certain sites. There are currently 18 outstanding requests for free cable modem or video services (© 9 to 10). This is a 45 percent decrease in outstanding requests from the third quarter. The Cable Office also notes that it met with Comcast to discuss the three I-NET sites that are outstanding (Parkland Middle School, Connecticut Park Elementary School, and Washington Suburban Sanitary Commission – Burtonsville). Comcast indicated that it will report back to the Cable Office within two weeks (© 7).

#### **C. Comcast Compliance Reports**

The Cable Office stated that beginning in October 2006, Comcast began using different parameters to calculate their compliance for 30 and 60 second call answering, as required by the FCC. Although Comcast used this new methodology to prepare October and November reports, the Cable Office reports that Comcast still does not meet standards required by the franchise agreement. The Cable Office disagrees with the new methodology. **The Committee may wish to discuss this issue at the briefing.**

#### **D. RCN Auction**

RCN appears to be considering selling the company. According to news articles, "RCN put itself on the block in September . . . At the time, RCN was said to be pursuing a dual-track strategy – an outright sale or, if bid prices came in too low, pursuit of smaller telephone companies to add to its portfolio." Select articles related to the potential sale of RCN are on © 29 to 32.

#### **E. Update on Verizon Franchise**

On November 28, 2006, the County approved a franchise agreement with Verizon to provide video services. In mid-December Verizon began offering video services in the County. The company has activated nine wire centers that service about 75,000 County homes. The Cable Office notes that Verizon will interconnect with Comcast's system in the Technical Operations Center within 180 days to provide Public, Education, and Government (PEG) channels over the company's network. Additional information, including channel assignments, appear on © 4 and 5.

The Cable Office reports that Verizon indicated that they would conduct proof-of-performance tests on January 30 and 31. While CTC witnessed these tests, the Cable Office reports that Verizon is requiring a restrictive confidentiality agreement that may hinder CTC's ability to provide the County with necessary documentation. The Cable Office notes that the confidentiality agreement was not discussed during the franchise negotiation process (© 7). **The Committee may wish to discuss this issue at the briefing.**

#### This packet contains:

	<u>Circle</u>
FCC fact sheet, June 2000	1
Memorandum from the Office of Cable and Communications Services	3
Requests for Cable Drops for Public Facilities	9
Office of Cable and Communications Services Complaint Data	11
CTC's Testing and Inspection Report Comcast	13
CTC's Testing and Inspection Report RCN	26
RNC Sale News Articles	29

#### **Attachments**

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Rates for channels sold on a per-channel or per-program basis are not regulated.

## CUSTOMER SERVICE GUIDELINES

Pursuant to the 1992 Cable Act, the Commission adopted federal guidelines which provide a standard for improving the quality of customer service rendered by cable operators. These guidelines provide minimum levels of service which should be provided by a cable operator. The guidelines address issues such as the cable operator's communications with customers over the telephone, installations, service problems, changes in rates or service, billing practices and information that must be provided to all customers. **Although the standards were issued by the Commission, local franchising authorities are responsible for adopting and enforcing customer service standards. Franchising authorities may also adopt more stringent or additional standards with the consent of the cable operator or through enactment of a state or municipal law.**

### Subscriber Calls to a Cable System

Under the federal guidelines, each cable system must maintain a local, toll-free or collect-call telephone line available 24 hours a day, 7 days a week. During normal business hours, company representatives must be available to respond to customer inquiries. After normal business hours, (the hours during which most similar businesses in the community are open to serve customers), the cable system may use an answering service or machine so long as messages are answered the next business day. In addition, the cable system's customer service center and bill payment locations must be conveniently located and must be open at least during normal business hours and should include at least one night per week and/or some weekend hours.

A call to a cable system must be answered -- including time the caller is put on hold -- within 30 seconds after the connection is made. If the call is transferred, the transfer time may not exceed 30 seconds. Also, cable system customers may receive a busy signal no more than three percent of the time. Although no special equipment is required to measure telephone answering and hold time, cable operators should use their best efforts in documenting compliance. These requirements must be met 90 percent of the time, measured quarterly, under normal operating conditions.

### Installations, Service Interruptions and Service Calls

Federal guidelines state that standard installations -- which are those located up to 125 feet from the existing distribution system -- must be performed within seven days after an order has been placed. Except in situations beyond its control, the cable operator must begin working on a service interruption no later than 24 hours after being notified of the problem. A service interruption has occurred if picture or sound on one or more channels has been lost. The cable operator must begin to correct other service problems the next business day after learning of them. Cable operators may schedule appointments for installations and other service calls either at a specific time or, at a maximum, during a four-hour time block during normal business hours. Cable operators may also schedule service calls outside of normal business hours for the convenience of the customer. No appointment cancellations are permitted after the close of business on the business day prior to the scheduled appointment. If the cable installer or technician is running late and will not meet the specified appointment time, he or she must contact the customer and reschedule the appointment at the convenience of the subscriber. These requirements concerning installations, outages and service calls must ordinarily be met at least 95 percent of the time, measured quarterly, under normal operating conditions.

### Changes in Rates or Service and Billing Practices

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Thirty days advance written notice (using any reasonable written means) must be given to subscribers and local franchising authorities of any changes in rates, programming services or channel positions, if the change is within the control of the cable operator. Cable operators are not required to provide prior notice of any rate change that is the result of a regulatory fee, franchise fee, or any other fee, tax, assessment, or charge of any kind imposed by a Federal agency, State, or franchising authority on the transaction between the operator and the subscriber. Cable system bills must be clear, concise and understandable, with full itemization. Cable operators should respond to written complaints about billing matters within 30 days. Refunds must be issued no later than either the customer's next billing cycle or 30 days following resolution of the request, whichever is earlier, or upon the return of equipment when service is terminated. Credits must be issued no later than the billing cycle following the determination that a credit is warranted.

### **Information to Customers**

The following information must be provided to customers at the time of installation and at least annually to all subscribers and at any time upon request: products and services offered; prices and options of programming services and conditions of subscription to programming and other services; installation and service maintenance policies; instructions on how to use the cable service; channel positions of programming carried on the system; and billing and complaint procedures, including the address and telephone number of the local franchising authority's office.

### **UNAUTHORIZED RECEPTION OF CABLE SERVICES**

The 1984 Cable Act provides damages and penalties of up to two years in prison and/or \$50,000 in fines to be assessed against anyone determined to be guilty either of the unauthorized interception or reception of cable television services or of the manufacture or distribution of equipment intended to be utilized for such a purpose. The Commission does not prosecute unauthorized reception of cable services. Rather, cable operators aggrieved by a violation may bring an action in a United States district court or in any other court of competent jurisdiction. Knowledge of violations should be reported directly to the cable system.

### **SIGNAL CARRIAGE REQUIREMENTS**

The 1992 Cable Act established new standards for television broadcast station signal carriage on cable systems. Under these rules, each local commercial television broadcast station was given the option of selecting mandatory carriage ("must-carry") or retransmission consent ("may carry") for each cable system serving the same market as the commercial television station. The market of a television station is established by its Area of Dominant Influence ("ADI"), as defined by Arbitron and/or modified by the Commission. Every county in the country is assigned to an ADI, and those cable systems and television stations in the same ADI are considered to be in the same market. Upon the request of a television station or a cable system, the Commission has the authority to change the ADI to which a station is assigned. As a result of Arbitron abandoning the television research business, the Commission has determined that, effective January 1, 2000, the market of a television station shall be its Designated Market Area ("DMA") as determined by Nielsen Media Research.

### **Must-Carry/Retransmission Consent Election**

Every three years, every local commercial television station has the right to elect either must-carry or retransmission consent. The initial election was made on June 17, 1993, and was effective on October 6, 1993. The next election occurred on October 1, 1996, and was effective January 1, 1997. All subsequent

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DEPARTMENT OF TECHNOLOGY SERVICES

Isiah Leggett  
County Executive

Michael H. Knuppel  
Acting Chief Information Officer

**M E M O R A N D U M**

**January 29, 2007**

**TO: Management and Fiscal Policy Committee**

**FROM: Jane Lawton, Cable Communications Administrator**  
**DTS- Office of Cable and Communications Services**

**SUBJECT: Quarterly Customer Service MFP Worksession**  
**Monday, February 5th, 2007**  
**Fourth Quarter 2006**

**I. Customer Service Issues**

**A. Comcast:**

1. **Rate Increase-** On March 1<sup>st</sup>, 2007, Comcast will increase their rates on Basic & Preferred service. The rate for Basic/Preferred Service will be \$58.05. This price does not reflect applicable franchise fees.
2. **Free Video and Cable Modem Obligations -** There are currently 18 outstanding requests for free cable modem or video services (list attached). Comcast has worked very diligently over the past quarter to install drops to the schools that were outstanding.
3. **Video Reception/Service-** At the last MFP committee meeting it was noted that there were many complaints about TV programming that would "freeze-up" or "tile". In our attached engineering report a simulation of what this issue looks like is included. CTC engineers met with Comcast and report that this problem does not appear to be in their head-end, but is most likely related to problems at or near the subscribers' homes. Our engineers suggest drop replacement as a first line of action to address those complaints along with scheduling a service call with a technician familiar with troubleshooting these issues.

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Office of Cable and Communication Services

Comcast is trying to improve their service quality by sending all-digital signals to those who have the proper equipment to support all digital services like HDTV. Since digital signals are more susceptible to minor signal quality issues, this "tiling" is somewhat inherent in those services. Our engineers report that as the geographic areas of the system are converted to provide the all-digital programming, some subscribers who may have old or damaged drop cables, for example, are likely to experience this problem. Comcast is working with subscribers to resolve these issues. During December there was a decrease in the number of "pixelation" complaints.

**B. RCN:**

1. **Rate Increase-** On January 1<sup>st</sup>, RCN increased their Full Basic Cable TV service to \$53.95. This price does not reflect applicable franchise fees.

**C. Verizon:**

1. **Franchise Approval-** On November 28, 2006 the County approved a franchise with Verizon Communications to provide video services.
2. **Service activated-** In mid-December Verizon began offering video services in the County. They have activated 9 wire centers, which service about 75K homes in the County. The following wire centers have been activated: Woodacres, Wheaton, Colesville, Northwood, Wildwood, Beltsville, Laurel & the municipalities of Glen Echo and Kensington.
3. **Rate Increase-** On January 29<sup>th</sup> Verizon will increase their rates to NEW customers. The new rate will be \$42.99. This price does not reflect applicable franchise fees.
4. **Payments-** Verizon has paid the \$200,000 for the grant and the \$50,000 for the change of the PEG channel assignments (Logo & Marketing support) that are required by the franchise.
5. **PEG channels-** Verizon will interconnect with Comcast's system in the TOC within 180 days to provide the PEG Channels over their network. Verizon has confirmed the following channel assignments.

10	Montgomery College TV
11	City of Rockville
16	Montgomery Municipal Cable
19	Access Montgomery

21	Access Montgomery
28	The City of Takoma Park
30	County Cable Montgomery
35	MCPS
36	MCPS
37	University of MD (UMUC)
40	University of MD (UMTV)

## II. Customer Complaints

**A. Comcast-** Complaints to the Cable Office dramatically decreased from the 3<sup>rd</sup> quarter. Complaints were at a yearly high of 506 in the 3<sup>rd</sup> quarter and dropped to 282 in the 4<sup>th</sup> quarter.

**B. RCN-** Complaints to the Cable Office nearly doubled from the 3<sup>rd</sup> quarter. Complaints rose from 9 in the 3<sup>rd</sup> quarter to 16 in the 4<sup>th</sup> quarter. Service and reception are the biggest areas of complaints. The response time has greatly diminished over the past several quarters.

**C. Verizon-** No complaints were received against Verizon in the 4<sup>th</sup> quarter.

## III. Compliance Issues: Reports

Comcast & RCN have provided both video and cable modem service reports as required. Verizon will begin providing reports next quarter.

### A. Comcast

**1. Liquidated Damages-** As was reported at our last MFP meeting, Comcast was assessed liquidated damages in the amount of \$1,228.20 for failure to meet the 30 & 60 second phone answering standards during the June –August time frame. The Franchise Agreement, as amended by the Transfer Agreement of August 2000, sets damages for the first violation of quarterly customer service standards at \$500; for the second violation within eighteen months, at \$5,000; and for subsequent violations within eighteen months after such a violation, at \$10,000. Franchise Agreement at § 14(g)(7). Comcast was unable to come back into compliance for the September –November time frame and has been assessed liquidated damages in the amount of \$12,281.84.

**2. Reports-** Beginning in October 2006, Comcast used different parameters to calculate their compliance for 30 and 60 second call answering, as required by the FCC. Reports for October and November have been prepared with this new methodology and still do not meet standards. The County does not agree with this

mew methodology and has requested the reports as normally reported. We are expecting further information this week.

**B. RCN-**

1. **Liquidated damages-** RCN was warned and able to come back into compliance before liquidated damages were assessed.

**IV. Construction Violations:**

**A. Comcast-**

Our inspectors reported 2,298 violations in the 4th quarter of which Comcast had reported repair of 37% by the end of the quarter - more than half of those took over 30 days to repair.

Based on Comcast reports for completing the work to correct violations from the 3rd quarter, we note that 66% of those took over 30 days to correct.

1. **Maintenance-** Comcast had reported last quarter that they had suspended maintenance on their plant and that there was no work being performed in the right-of-way. Given that the maintenance work to correct violations is taking longer, we will be discussing whether they are cutting back on those crews as well.
2. **Testing-** Based on our test results for the 4th quarter the Comcast system is performing at levels that exceed the FCC's standards. In fact, our engineers report that this round of measurements was the best they had seen in some time. So we are pleased that the system is performing so well.
3. **Re-Inspections-** Our inspectors report that their re-inspection of past violations that have been reported to the County corrected but have not been fixed is 20%, exceeding the benchmark of 10%. Comcast will have to reimburse the County for these re-inspections.
4. **Reports-** The construction report has just been provided to the County and Comcast. Comcast has not been given adequate time to respond to these outstanding issues and The Cable Office will meet with them next week to resolve these issues.

**B. RCN –**



We continue to have problems with RCN's unresponsiveness to correcting violations that our inspectors find and report to them for correction. They have only reported correcting 304 violations out of over 2,400 reported in 2006.

1. **Re-Inspections**- Based on our independent inspection of sites where we reported violations it appears that there is corrective work being done, but RCN has not reported those corrections to us. A meeting will be held with RCN to address their reporting. We have asked for a meeting with their Regional Director of Regulatory Affairs in an effort to correct these problems. RCN will have to reimburse the County for these re-inspections.
2. **Testing**- On the positive side, except for some problems with one channel on the day we tested their signal quality, their system also meets or exceeds the FCC's performance standards.

#### **C. Verizon**

1. **Testing**- On January 30<sup>th</sup> and 31<sup>st</sup>, Verizon notified the County that they would be conducting proof-of-performance tests. Our contract engineers, CTC, witness these tests. Verizon is requiring a very restrictive confidentiality agreement that we believe would hinder their availability to provide the County with necessary documentation. This agreement was not mentioned during the franchise negotiation process.

#### **V. Institutional Network (I-NET)**

Last week Cable Staff met with Comcast representatives to discuss the remaining I-NET sites that are outstanding. Parkland MS, Connecticut Park ES and WSSC-Burtonsville are the only three sites that need to be completed per the franchise agreement. Comcast is currently reviewing the list and will report back to the County within 2 weeks.

#### **VI. Rate Regulation**

On January 11<sup>th</sup>, 2007, the County issued an Executive Order, setting Comcast's basic cable rate at \$18.08 pursuant to FCC form 1240 filed April 1, 2006.

The County participates in a consolidated review of Comcast's 2006 FCC Form 1205. The County has received a proposal from Comcast to resolve the issues that have been identified by our consultants. The County is in the process of accepting this proposal and then we will issue the Executive Order for the 1205.

## **VII. Mid-Term Technical Review**

We sent both RCN & Comcast letters in the end of Nov. concerning the mid-term technical review – reports are due to us the beginning of March

Pursuant to §6 (u) of the current Franchise Agreement, the County is preparing to review and evaluate the technical performance and capabilities of RCN & Comcast's cable system. We have requested that each franchisee provide the County with a report addressing industry-wide advances in cable television system technology that have been developed since the design approval of the Montgomery County system.

# Open Requests Free Cable Drop: Comcast

Date Submitted	Database Number	Company Name	Address	City	Service Requested	
					TV	Cable Modem
2/23/2004	613	Montgomery County Police	15800 Crabbs Branch Wy	Rockville	Yes	No
11/4/2005	939	Dept. of Health and Human Services	7676 New Hampshire Av	Takoma Park	No	Yes
1/11/2006	721	Department of Fire and Rescue Services	8110 Georgia Av	Silver Spring	Yes	No
1/27/2006	726	Dept. of Public Works and Transportation	1109 Spring St	Silver Spring	Yes	No
2/2/2006	729	Silver Spring Innovation Center- Dept. of Econ Dev	8070 Georgia Av	Silver Spring	Yes	No
2/17/2006	730	St. Peter's School	2900 Sandy Spring Rd	Olney	Yes	No
4/4/2006	737	Department of Police	8300 Hegelman Ct	Gaithersburg	Yes	No
4/10/2006	739	Montgomery College	7977 Georgia Av	Silver Spring	Yes	No
5/1/2006	741	MCPS- Div. of Construction & Facilities	2096 Gaither Rd-2nd floor	Gaithersburg	Yes	No
5/12/2006	743	Rockville Public Library	21 Maryland Ave	Rockville	Yes	No
5/22/2006	944	Christ Episcopal School	109 S Washington St	Rockville	Yes	No
6/23/2006	949	Montgomery County Police	7700 Old Georgetown Rd	Bethesda	Yes	No
6/26/2006	950	Our Lady of Lourdes Catholic School	7500 Pearl St	Bethesda	Yes	No
8/17/2006	952	Wheaton Business Innovation Center	11002 Viers Mill Rd	Wheaton	Yes	No
9/26/2006	955	Montgomery Co- Office of the Ombudsman	23201 Stringtown Rd	Clarksburg	No	Yes

9

<i>Date Submitted</i>	<i>Database Number</i>	<i>Company Name</i>	<i>Address</i>	<i>City</i>	<i>Service Requested</i>	
					<i>TV</i>	<i>Cable Modem</i>
11/28/2006	959	Montgomery County Coalition for the Homeless	5830 Riggs Rd	Laytonsville	Yes	No
1/12/2007	963	Germanatown Library	19840 Century Blvd	Germanatown	No	No
1/25/2007	964	Catholic Community Services	251 N Stonestreet Av	Rockville	Yes	No

*Total Open  
Requests*

18

(10)

# Comcast Complaints By Quarter for 2006

Total		VoIP		Cable		Service		Cable Line					
Complaints	Billing	Service	Modem	Telephone	Reception	Construction	Marketing	Installation	Service ability	Related	Other		
2006													
1st QTR	263	90	152	1	48	9	58	4	7	20	6	70	20
Percentage		34.2%	57.8%	0.4%	18.3%	3.4%	22.1%	1.5%	2.7%	7.6%	2.3%	26.6%	7.6%
2006													
2nd QTR	387	66	286	7	130	29	138	6	13	21	1	74	27
Percentage		17.1%	73.9%	1.8%	33.6%	7.5%	35.7%	1.6%	3.4%	5.4%	0.3%	19.1%	7.0%
= 2006													
3rd QTR	506	101	385	16	160	61	217	9	7	42	5	66	26
Percentage		20.0%	76.1%	3.2%	31.6%	12.1%	42.9%	1.8%	1.4%	8.3%	1.0%	13.0%	5.1%
2006													
4th QTR	282	73	193	14	87	29	108	11	5	10	2	38	17
Percentage		25.9%	68.4%	5.0%	30.9%	10.3%	38.3%	3.9%	1.8%	3.5%	0.7%	13.5%	6.0%
Totals	1,438	330	1,016	38	425	128	521	30	32	93	14	248	90
% Totals													
By Complaint		22.9%	70.7%	2.6%	29.6%	8.9%	36.2%	2.1%	2.2%	6.5%	1.0%	17.2%	6.3%
% Total by Issue		11.1%	34.3%	1.3%	14.3%	4.3%	17.6%	1.0%	1.1%	3.1%	0.5%	8.4%	3.0%

Total Issues Generated 2,965 Number of Issues per Complaint 2.1

# RCN Complaints By Quarter for 2006

Total		VoIP		Cable		Service		Cable Line				
Complaints	Billing	Service	Service	Modem	Telephone	Reception	Construction	Marketing	Installation	ability	Related	Other
2006												
1st QTR	13	8	1	0	2	3	0	0	0	0	0	1
Percentage		61.5%	7.7%	0.0%	15.4%	23.1%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%
2006												
2nd QTR	15	9	1	1	3	4	1	0	0	0	0	1
Percentage		60.0%	6.7%	6.7%	20.0%	26.7%	6.7%	0.0%	0.0%	0.0%	0.0%	6.7%
2006												
3rd QTR	9	5	3	0	2	0	0	2	0	0	0	0
Percentage		55.6%	33.3%	0.0%	22.2%	0.0%	0.0%	22.2%	0.0%	0.0%	0.0%	0.0%
2006												
4th QTR	16	6	7	0	2	2	5	0	1	0	3	2
Percentage		37.5%	43.8%	0.0%	12.5%	12.5%	31.3%	0.0%	6.3%	0.0%	18.8%	12.5%
Totals	53	28	12	1	9	9	6	0	4	0	3	4
% Totals												
By Complaint		52.8%	22.6%	1.9%	17.0%	17.0%	11.3%	0.0%	7.5%	0.0%	5.7%	7.5%
% Total by Issue		36.8%	15.8%	1.3%	11.8%	11.8%	7.9%	0.0%	5.3%	0.0%	3.9%	5.3%
Total Issues Generated										Number of Issues per Complaint		
76										1.4		

# MONTGOMERY COUNTY

## Testing and Inspection Report

### Comcast Subscriber Network

Fourth Quarter 2006  
October 1 – December 31, 2006

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## **I. INTRODUCTION**

This report documents the quality of construction and the technical performance of the cable television system in Montgomery County during the fourth quarter of 2006.

The Comcast system rebuilt in 2002 provides service to County subscribers from its headend via 14 optical transition nodes ("OTN"), or hubs, and approximately 362 fiber optic nodes, each of which is designed to deliver signals to approximately 1,500 homes. The rebuild construction included an Institutional Network ("I-Net") presently connected to over 100 County buildings and offices.

The County's Office of Cable and Communication Services administers a comprehensive cable oversight program to ensure that a high level of services are provided in compliance with the terms and conditions of the Franchise Agreement, applicable sections of the County Code, Federal Communications Commission ("FCC") rules and regulations, and other relevant guidelines, rules, and generally accepted industry practices. Columbia Telecommunications Corporation ("CTC"), under contract to the County, provides the engineering support for the County's testing and inspection program. The program includes inspection of the physical cable system plant and system performance monitoring and testing.

The inspection portion of the program examines each phase of the construction process, which includes the addition of new service areas to the system as well as maintenance and repair of the existing system. To evaluate overall plant construction, inspections are conducted in three phases: in-progress construction, post-construction, and reinspection of repairs. Details of the inspection violations reported are provided in Appendix A.

The performance testing portion of the program is comprised of a series of system performance tests including:

- Semi-annual Proof-of-Performance tests required by the FCC;
- Quarterly monitor tests to collect additional data on system performance between the semi-annual proof test periods;
- Acceptance tests of newly built and activated segments of the system; and
- Periodic tests of the fiber optic connections from the public, educational, and government programming ("PEG") facilities to the cable system's central programming distribution center or "headend."

These tests are used to monitor the compliance of the system with FCC, Comcast, and County technical specifications. The schedule for the tests is provided in Appendix B.

This report details the results of the testing and inspection program conducted by CTC for the period from October 1 to December 31, 2006.

## II. CONSTRUCTION INSPECTION

The County continuously inspects the quality of in-progress construction work and the physical cable plant and equipment in the public rights-of-way. These inspections verify the extent to which the construction complies with the engineering design, construction standards for physical cable plant and installation of equipment on the cables, safety of work-in-progress, and the restoration of work areas after construction has been completed. The results of our inspection are summarized in this report. Where problems are found during the inspection process, the specific violations are cited and provided to the operator for appropriate corrective action. This process verifies that for the locations inspected, the system is constructed, maintained, and operated in accordance with local and national construction and safety codes as required in §5 of the Franchise Agreement. In addition to other construction and operating requirements of the County Code and the Franchise Agreement, the primary authorities for compliance are summarized in Appendix F, with explanations of typical violations reported by our inspectors.

### A. Work-in-Progress Inspection Sites

During construction, the performance of the work crews is monitored for compliance with Department of Public Works and Transportation standards for work in the public rights-of-way, national codes, and with generally accepted cable industry standards for construction. The system operator provides the County with a list of locations where its construction crews will be working so that our inspectors may visit a sampling of these locations to verify that all safety codes and construction regulations required by the Franchise Agreement are followed.

Table 1 summarizes the number of "work sites" inspected during the reporting period. The statistic reported for work sites is simply the total number of sites each month where the operator reported active construction. This statistic gives a sense of the level of construction activity in the community.

<b>Table 1</b> <b>Work Sites and Project Inspections</b>			
<b>Month</b>	<b>Total # Active Work Sites</b>	<b>Total # Work Sites Inspected</b>	<b>% Inspected</b>
October	32	46*	100%
November	128	30	24%
December	104	27	26%
<b>Quarter Totals</b>	<b>264</b>	<b>103</b>	<b>39%</b>
<b>2006 Totals</b>	<b>1246</b>	<b>392</b>	<b>32%</b>

\* Some crews were found working at sites not reported by Comcast.

In last quarter's report, we noted that Comcast had suspended maintenance work for a period of time. During the fourth quarter, Comcast reported crews working at approximately 55% more sites than they reported during the third quarter. However, it appears that work is still quite limited compared to what has been reported in past quarters. Nearly all work reported this period has been to maintain the plant (e.g. replacing bad spans of cable and drops). New construction was reported at only a few locations -- approximately 6% of the total locations where Comcast reported crews working.

#### B. Design Map Review

As was the case for last quarter, no design maps were submitted for our review during the fourth quarter.

#### C. Construction Inspection Results

After construction is complete, the physical plant and construction work areas are inspected to verify that construction and restoration of the work site complies with the standards required by the Franchise Agreement.

We reported 2,298 violations during the fourth quarter. Comcast advised us that as of the end of the quarter they had corrected 37% of the fourth quarter violations, of which 45% were reported corrected within 30 days.

We reported in the fourth quarter 2005 report that Comcast had asked the County to provide inspection violations in electronic format so they could more easily parse out work to the appropriate work crews for repair. Comcast claimed that this process would enable them to complete repairs more quickly and expedite reporting of the corrected work to the County. Prior to that time the violation reports had been exchanged between Comcast and CTC in hard copy via U.S. mail or hand delivery. In our review of the effectiveness of the new electronic transmission process over the past year we find that, on average, Comcast has only slightly improved the average percentage of violations taking over 30 days to correct: from 39% at the end of 2005 to 37% at the end of 2006.

By the end of the fourth quarter, Comcast reported that all of the outstanding violations reported during the third quarter had been corrected. However, 66% of those violations took over 30 days for Comcast to correct, but no explanation was provided as to why it took so long to correct so many of the problems. This may be attributable to the slowdown in work in the field (as we discussed above in Section A) since many of the problems would have required work crews to bury the exposed cables that had been reported. During the third quarter we had reported approximately 100 such sites. Table 2 summarizes Comcast's repair record.

<b>Table 2</b> <b>Comcast Repair Record of Reported Violations</b>						
	1st Qtr 06	2nd Qtr 06	3rd Qtr 06	4 <sup>th</sup> Qtr 06	Total	Percent
Total	2150	2199	2450	2298	9097	
Violations						
30 days or less	1459	2168	824	387	4838	64
Over 30 days	691	31	1626	464	2812	37
Total	2150	2199	2450	851	7650	
Repaired						
Outstanding	0	0	0	1447	1447	

Table 3 summarizes the violations reported during the fourth quarter by type of violation category.

<b>Table 3</b> <b>Construction Inspection Summary – Reported Violations</b>					
Type of Problem	2005 4th Quarter	2006 1st Quarter	2006 2nd Quarter	2006 3rd Quarter	2006 4th Quarter
Construction	370	1013	1460	1720	1364
Equipment	201	242	48	49	75
Restoration	209	56	58	123	179
Subscriber Drops	630	839	633	558	680
<b>Totals</b>	1629	2150	2199	2450	2298

Construction violations are related primarily to the mainline or backbone fiber optic and coaxial cables located in the public rights-of-way. Inspectors check to see that the construction work meets the National Electrical Safety Code and other applicable construction standards.

Once construction is completed the operator is required to restore the work area and repair any damage the work may have caused. The Restoration category includes any problems found from recent construction work. The Equipment category includes violations that require repair of broken equipment that presents a safety hazard, removal of old unused equipment, and in some cases, installation of equipment that is required but not present, such as covers on pedestals or cabinets to contain Comcast's equipment.

Inspection of the cables that connect the subscriber's residence, or "drop" cables, with the cable plant along the street generally includes inspecting installations at the residence point-of-entry to ensure compliance with National Electrical Code, particularly regarding grounding.

A detailed explanation of the standards used for our inspection and the authority cited is included in Appendix F.

During the fourth quarter we continued our inspection of areas where the system rebuild was completed years ago and where general inspection of those areas has not been performed in quite some time. Those areas, mostly in older sections of Silver Spring and Bethesda, are predominantly aerial construction where the cable plant is attached to utility poles. We have found that over the years there have been many changes to the aerial plant, subscriber drops, and supporting utility poles in these inspection areas. Overall these changes have resulted in problems that accounted for approximately 23% of the total violations reported during the fourth quarter. In addition to presenting safety hazards, these problems leave the areas unsightly. Generally, the problems found in these areas included:

- Relocating cables to new poles so the old poles may be removed;
- Properly securing coils of plant expansion cables that have fallen (some to the ground);
- Removing unused drop cables that dangle from the poles or strand;
- Replacing broken guy wires or installing missing guy wires where needed to add support to utility poles; and,
- Burying exposed temporary underground cables in the rights-of-way.

The Construction category also included a number of clearance issues (18% of the total) from other aerial cables. Clearance issues are usually addressed by working with the owners of the other cables on the poles to determine what cables need to be moved to meet standards for attachment to the satisfaction of the pole owner. As we have noted in previous reports, some of the poles are becoming quite full with cables of multiple companies, so making space for others wishing to attach new fiber cables can become problematic.

We also found a number of locations where the cables were falling away from their supporting strand due to a broken lashing wire which secures the plant to its supporting steel strand attached to the poles. These cables need to be properly lashed to the strand before they fall low enough to create obstructions to vehicular or pedestrian traffic at those locations.

Grounding related problems on the mainline plant accounted for 10% of the violations reported during the period. These included locations where there were no ground wires where required, ground wires were not attached to ground rods, or the cable was not bonded to the main electric ground wire.

In the Equipment category, violations included broken protective covers for cables on poles and open pedestals that needed to be replaced. There were also a number of sites where guards to protect the cables from damage by large tree branches were required (or, alternatively, tree branches required trimming).

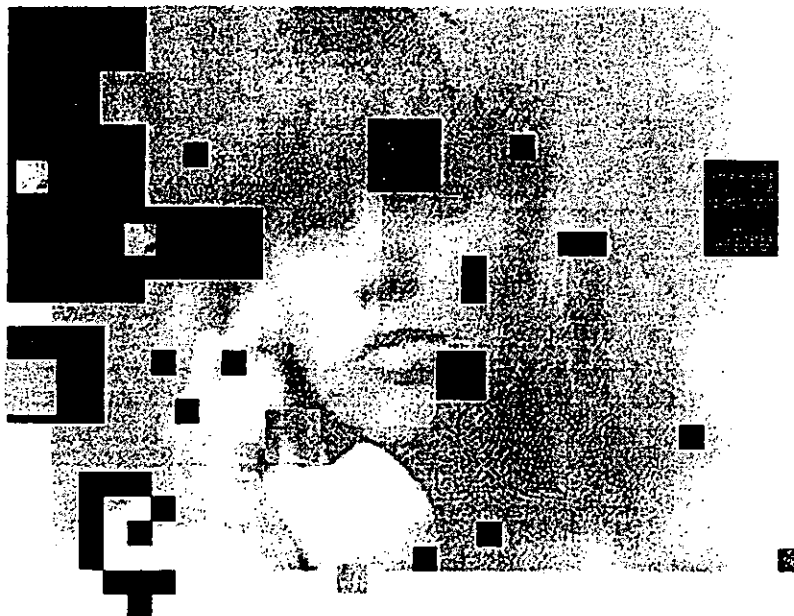
In the Restoration category, we reported approximately 180 sites that required proper restoration of the work area, such as seeding or placing sod where construction work left ruts or large areas of dirt in lawns. Some locations also required removal of dirt piles along sidewalks and construction debris in the work areas. We reported a number of areas where construction workers left trenches or pits open and unprotected, which created safety hazards for residents. We also reported a number of sites with temporary patches in driveways or roadways that had either sunken below grade or heaved above the surface area and which required permanent repair.

Most of the violations we cited for subscriber drop installations included old and unused cables that needed to be removed. There were also approximately 190 sites reported where portions of underground drops had become exposed and presented a tripping hazard. Other drops needed to be properly secured to the house or utility pole. There were approximately 145 homes where we found the drop cable was not properly grounded at the point-of-entry to the house.

#### Complaint Investigation

In our Third Quarter report we noted recurring subscriber complaints about brief "freezing-up" or "tiling" of television pictures. This problem, illustrated in the simulated photo below (Photo 1), is described as very quick locking-up of the program picture that results in the appearance of "tiles" in the picture. These frequently appear as black or color tile segments of the picture that appear for a moment on the television screen. Often this is accompanied with loss of audio for that short period of time. This picture disruption is an annoyance to subscribers, especially when it frequently recurs during a program. The illustration below shows what the picture looks like when this occurs.

**Photo 1: Simulation of Picture Tiling**



Some aspects of these picture problems are inherent in digital video. When subscribers may have complained in the past about grainy pictures or "ghosts" in the picture, it may have been

attributable to problems such as low analog signal levels or unwanted signals that ingress the cable system through loose connections. Those kinds of problems resulted in images that were not as clear as they should be, or in the case of ingress, may have resulted in extraneous ghost-like images visible in the background of a program. In short, the signal quality is poor.

Digital signals are much more sensitive to signal quality problems than are analog signals. With digital signals, if the signal level is marginal, the data is either received and the picture is fine, or the data is not received and the picture cannot be created on the screen. When this happens, the last image (or partial image) received is all that is visible on the screen. This appears to the viewer as a partial or "tiled" picture, as shown in the photo simulation. In the case of weak analog signals, the picture will be complete but will appear grainy or have "ghosts."

Sometimes picture tiling may be due to problems from the original program source that transmits the signal to the cable system. In other cases, it may be caused by faulty equipment. In still other cases, it may be traced to problems with the cables on the street or at the subscriber drop.

At the County's request, we met with Comcast engineers during the fourth quarter to discuss the nature of the picture tiling complaints and the likely causes. Based on these discussions we concluded that it appears that many of the problems were reported from areas of the system that had been converted to enable delivery of all-digital signals to subscribers who have digital equipment capable of receiving those services. It does not appear that the problems are originating in the system headend. Many of these problems have been attributed to the need to replace drop cables and/or connectors, or due to poor internal cabling. Troubleshooting these problems require cable technicians properly trained in diagnosing signal problems and identifying where the problem lies along the path of cables to the home.

County staff reported that they received fewer picture tiling complaints in December than was reported during the two previous months and during the third quarter, when subscribers began complaining about these "pixilation" effects. Nevertheless, to minimize the number of these complaints, we recommend that the County work with Comcast to institute policies that require drop replacement at the time Comcast converts a subscriber to all-digital programming. For any subscriber that experiences recurring problems of this nature, we suggest that Comcast's first step should be to replace the drop. If that does not correct the problem then a service technician familiar with diagnosing and fixing pixilation-type complaints should be dispatched to the subscriber.

#### Inspection Alerts

We report violations that present a hazardous situation or a potential liability to the County or cable system operator as "Inspection Alerts." The operator attempts to correct these violations within seven days. During the fourth quarter we found 19 locations where these conditions existed. This is an increase over previous quarters. The violations included sites where workers left open construction pits or temporary mainline cables exposed in the right-of-way and/or across lawns and driveways. By the end of the fourth quarter, Comcast reported fixing all but three of those problems -- 10 of them within seven days. The remaining Alerts took anywhere

from 10 days to one month to correct. The three outstanding Alerts from this quarter were locations with exposed temporary underground cables ranging in length from 100 to 300 feet.

By the end of the fourth quarter Comcast reported they had repaired all of the alerts reported during the third quarter; however, only two of the eight alerts were fixed within the seven day period.

#### D. Reinspection of Violations

After Comcast reports correction of violations, we reinspect a sampling of those violations to verify that the repair has been made and that the problem has been corrected.

Based on our reinspection of the violations reported for repair during the third quarter, we found that approximately 20% were not corrected as Comcast had reported. We have provided a list of the non-repaired items to Comcast for correction. For prior quarters in 2006 this statistic was much lower: first quarter – 8%, second quarter – 8%, third quarter – 11%. Many of the violations not repaired included problems with drops, elevated anchor rods, and clearance issues. We recommend that the County ask Comcast to provide a plan for how they will improve the repair rate of violations, whether through additional worker training or improved quality control efforts.

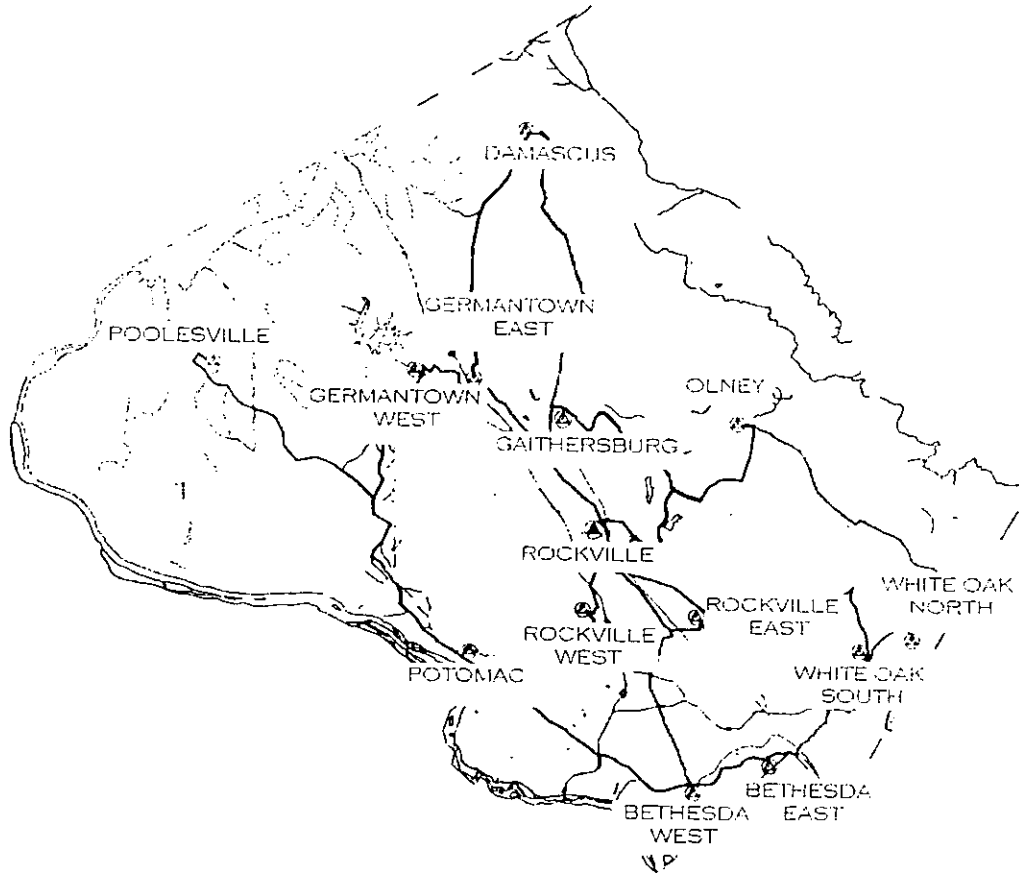


### III. SYSTEM PERFORMANCE TESTING

CTC conducts a program of system-wide tests to evaluate the overall performance of the cable system. The performance tests are based on FCC and Franchise requirements and the approved design characteristics of the cable system. The testing program includes tests for newly constructed areas, required FCC tests, and monitor tests.

The system headend is located at the Comcast facility on Gude Drive in Rockville. The rebuilt system design utilizes 14 optical transition nodes ("OTN"), as well as a separate OTN dedicated to serve Leisure World, with redundant fiber rings along separate paths to all OTNs except the Poolesville Hub. The OTNs serve approximately 362 fiber optic nodes throughout the County. The OTN architecture is illustrated in Figure 1.

Figure 1: OTN Architecture



The system operator and the County jointly established 49 fixed test points throughout the service area. These test points, located at the extremities of the system, were selected to provide a representative geographic sampling of the system for electronic performance measurements.

#### A. Federal Communications Commission Proof-of-Performance Tests

The system operator is required by the FCC to perform semi-annual Proof-of-Performance ("proof") tests in accordance with FCC procedures to demonstrate that overall performance of the cable system meets the minimum technical standards for analog signals as established by the FCC for cable television systems. The number of test locations is determined by the size of the system using a formula devised by the FCC. For the Comcast Montgomery County system, the FCC's test procedures require a sampling of signals on nine channels at a minimum of 21 different geographic locations on the system. The proof tests are performed once in the winter and once in the summer to measure system performance during temperature extremes that may impact transmission of signals across the system. We observe proof tests, which are performed by Comcast contractors, to verify they are properly conducted and that the results are accurately reported according to FCC rules.

Last quarter we reported that, based on the tests we observed, the system met the FCC's minimum performance standards. However, Comcast has still not provided us with the complete proof test results as required, so we are unable to determine whether the 24-hour test measurements were in compliance with FCC standards to document stability of the system performance over time.

The next proof-of-performance tests will be conducted during the first quarter of 2007.

#### B. Monitor Tests

The FCC only requires operators to test a select number of sites on the system twice each year. For the Comcast-Montgomery system, just nine of the 78 analog channels are required to be tested. However, the FCC requires the performance standards to be met on all analog channels throughout the system. Consequently, to supplement those measurements and to further ensure that the entire system meets FCC requirements, the County conducts a set of measurements at all test locations on the system to verify that FCC technical standards are continuously maintained across the system and on all analog channels as required. These are referred to as "monitor tests" and are performed quarterly in addition to the proof tests.

CTC conducted monitor tests from November 21 – December 1, 2006. We were able to complete measurements at 46 of the 49 monitor test points. Several of the locations were inaccessible at the time of the tests. Comcast needs to reconnect test drops at 21400 Big Woods Road and 14117 London Lane, and the 26601 Long Corner Road site needs to be moved to a location farther from the busy roadway. All of the sites tested this quarter met or exceeded the FCC's performance standards. The minor problems we reported last quarter were not observed during testing this period.

Additional information on test measurements standards, including an explanation of the effects of signals that do not meet the minimum FCC technical measurements, is included in Appendix D. The current Comcast channel line-up is provided in Appendix E.

C. Acceptance Tests

No new nodes were tested during the fourth quarter.

D. PEG Feed Tests

We plan to perform PEG feed tests during the first quarter of 2007.

E. I-Net Tests

There were no I-Net tests conducted in the fourth quarter.

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Columbia Telecommunications Corporation  
5550 Sterrett Place • Columbia, MD 21044 • 410-964-5700 • fax: 410-964-6478 • www.internetCTC.com

January 24, 2007

Via Electronic Transmission

Ms. Jane Lawton  
Cable Communications Administrator  
Office of Cable and Communication Services  
Montgomery County Government  
100 Maryland Avenue, Room 250  
Rockville, MD 20850

Re: RCN Fourth Quarter 2006 Report

Dear Ms. Lawton:

This is to update you on the status of our testing and inspection of the RCN system during the fourth quarter of 2006.

**Construction Inspection**

*Cable Plant*

We reported 526 violations found on the RCN plant during the fourth quarter. Like last quarter, locations that required tree guards accounted for one-third of the problems cited. The majority of the remaining items reported included other mainline cable construction violations as follows:

- Pole guying problems where guy wires were broken or required but not installed (23%);
- Bonding and grounding issues (10%); and,
- Clearance with other telecommunications cables on the poles (13%), primarily with Comcast cables.

We also reported a variety of other problems, such as coils of expansion cables that had fallen from their ties to the strand, broken or missing pedestal covers, and a number of locations where the cables needed to be transferred to the new replacement pole so the old one can be removed. In addition to being a construction violation, some of the reported problems also created an unsightly appearance; however, since the RCN construction is relatively recent there were few of those types of problems overall.

Attachment A is a list of violations reported to RCN during the fourth quarter.

### *Subscriber Drops*

Problems with subscriber drops accounted for 10% of the total violations. The majority of these violations were for improper grounding of the drop cable, unused drop cables dangling from the strand at the pole and which required removal, and drop cables that needed to be properly secured to the pole.

### *Alerts*

There were two alerts reported to RCN for correction during the fourth quarter. Both alerts were for cables across sidewalks, which presented a tripping hazard. RCN reported correction of one location but not the second location, which is in front of a church and which church staff reported had been there for three months. RCN has also not reported correction of two alerts reported for repair during the third quarter.

### *RCN Repairs*

Last quarter we noted that RCN had not reported correction of 95% of the violations reported for repair in 2006. As of the end of the fourth quarter, we have reported a total of 2,418 violations to RCN for repair, of which RCN has reported addressing only 304. Most of the problems that they reported as repaired included installation of tree guards and guy wires where needed and addressing some of the clearance issues.

### *Reinspection*

During the fourth quarter we reinspected 693 violations from the third quarter and 430 violations from the second quarter. We found that 54% of the violations had not been corrected. This is worse than last quarter when we reported that 47% of reported violations had not been repaired.

## **Performance Testing**

### *Proof-of-Performance Tests*

The next Proof-of-Performance tests will be conducted during the first quarter of 2007. We are still awaiting delivery of a complete set of test data from the summer proof tests before we can determine if RCN has met all of the FCC performance standards.

### *Monitor Tests*

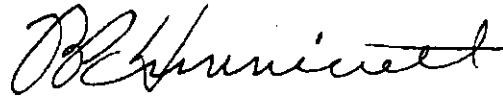
We performed monitor tests from December 11 – December 13, 2006. We measured signals at 10 of the 12 test locations and found that, except for the audio-to-video carrier levels for channel 18, all of the recorded measurements met the FCC minimum technical standards. The channel 18 audio-to-video levels exceeded the FCC limits at all locations tested. Although this is not a

Ms. Jane Lawton  
January 24, 2007  
Page 3

problem that is likely perceived by subscribers, RCN should correct the audio-to-video levels on this channel to meet FCC standards.

Should you have any questions regarding this report or need additional information, please let us know.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Hunnicutt".

Robert P. Hunnicutt

Attachment  
RPH/cc

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# Multichannel NEWSWIRE

## RCN Said to Test Sale Waters

By Mike Farrell 9/13/2006 5:14:00 PM

Perhaps encouraged by the strong valuation rival overbuilder WideOpenWest attracted when it sold out earlier this year, RCN is considering a sale itself.

The nation's largest overbuilder -- with about 418,000 subscribers, including a substantial presence in major markets like New York and Chicago -- RCN hired investment bankers Waller Capital and The Blackstone Group to advise on "strategic alternatives," including a sale, according to executives in the cable financial community.

"Our company policy is not to comment on market speculation, and we view this as market speculation," RCN senior vice president for strategic and external affairs Richard Ramlall said through a spokesman.

Officials at Waller and Blackstone declined comment.

Publicly traded RCN -- which emerged from Chapter 11 bankruptcy in 2005 with a virtually clean balance sheet -- is also pursuing possible acquisitions of competitive local-exchange carriers in case an outright sale is taken off the table.

But several executives in the cable investment-banking community said RCN is leaning toward an outright sale, at least for now, and it is beginning to send out feelers to interested buyers. According to those executives, RCN is not interested in selling the company piecemeal -- it will sell the whole company or nothing at all.

This marks a bit of a departure from its past strategy. In the past several years, RCN has sold off smaller, nonstrategic markets to consolidate its footprint in a few areas. Its most recent deal was for its 18,000-subscriber San Francisco system, which it sold to Astound Broadband for about \$45 million earlier this month.

While RCN has held off from selling out in the past years as cable valuations have declined, it could have been encouraged by the recent sale of WOW to Avista Capital Partners, a private-equity group that paid an estimated \$800 million for the 325,000-subscriber overbuilder. The WOW deal valued the company at about 9-9.5 times cash flow.

This would mean that RCN -- which is expected to report full-year-2006 cash flow of about \$126.9 million, according to Miller Tabak media analyst David Joyce -- could attract a price of \$1.1 billion-\$1.2 billion.

That actual sale price could be higher, given RCN's larger-market systems and the fact that it is publicly traded.

RCN stock was priced at about \$26 per share Tuesday, and it had a market capitalization of less than \$1 billion. The stock jumped to \$27.85 -- up \$1.85, or 6% -- in Wednesday-afternoon trading after Bloomberg News reported that RCN was considering a sale.

Books on the RCN systems went out earlier this week, according to one person in the cable investment-banking community.

According to several executives in the cable investment-banking community, prospective bidders on the systems include private-equity groups and other overbuilders, such as WOW and Georgia-based Knology.

While other larger cable companies could also be possible bidders, at least one executive in the cable industry said that may not be likely, given the national scope of RCN's footprint.

# Multichannel NEWSWIRE

## Round Two in RCN Bidding

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By Mike Farrell 11/15/2006 6:14:00 PM

The auction for cable overbuilder RCN entered the second round, with several companies submitting bids including Verizon Communications and possibly Comcast.

RCN put itself on the block in September after hiring private-equity giant The Blackstone Group and New York cable investment banker Waller Capital to investigate its strategic alternatives, including a sale.

At the time, RCN was said to be exploring a two-track strategy: an outright sale or, in the event bids came in too low, pursuit of smaller telephone companies to add to its portfolio.

According to an industry executive familiar with the auction process, bids for RCN have come in from several private-equity firms, Comcast and Verizon, the latter of which is pursuing its own video, voice and data strategy through the deployment of its fiber-optic-based FiOS service.

Initial bids, the executive said, have come in around 10-12 times 2006 cash flow, or \$1.5 billion-\$1.8 billion. At that level, RCN's 424,000 cable customers would be valued at \$3,500-\$4,200 apiece.

Comcast vice president of corporate communications D'Arcy Rudnay and Verizon executive director of media relations Bob Varettoni both declined to comment.

RCN senior VP of strategic and external affairs Richard Ramlall could not be reached for comment.

Verizon has been one of the more aggressive telephone companies in the video space. Since announcing its \$18 billion, five-year FiOS buildout plan last year, Verizon has secured video franchises in nine states and has launched service in seven -- California, Florida, Massachusetts, Maryland, Texas, Virginia and New York -- and it has about 118,000 video subscribers.

But those launches have primarily been in suburban areas like Keller, Texas, and in certain communities in Long Island and Westchester County in New York. Acquiring RCN could give the phone company a big boost in the video marketplace in some major cities.

While Verizon is expected to remain committed to its FiOS plans, being able to provide video, voice and data service through RCN would give the phone company an expanded base that could eventually be rolled over to FiOS once the network is fully built out.

Although executives close to Comcast denied that a bid for RCN has been made, the cable company's interest in RCN is not totally out of the question. RCN's biggest properties are in eastern Pennsylvania, Chicago, Boston and Washington, D.C. -- all Comcast strongholds -- and in New York City, close to Comcast clusters in New Jersey. However, other cable executives have said that if Comcast made a bid, it would be either to get a peek at RCN's books or to keep the properties out of Verizon's hands.

While there is still a way to go in the auction process -- it is expected to last at least until January -- there is a question as to whether a Comcast or Verizon buy of RCN would pass regulatory muster.

While there could be antitrust issues surrounding an RCN deal, other cable operators have been allowed in the past to buy overbuilders in markets where they were the dominant cable company. However, those deals also involved much smaller overbuilders.



# NEWSWIRE Multichannel

## Comcast, Verizon Out of RCN Race

By Mike Farrell 1/29/2007

The auction for overbuilder RCN, once expected to wrap up in January, will likely bleed into later months now that two potential suitors have dropped out of the running.

**In this story:**  
**WANTED A PEEK**  
**\$2,830 PLUS PER SUB**

According to several executives familiar with the auction, Verizon Communications and Comcast, once thought to be looking closely at the Herndon, Va.-based overbuilder, are no longer involved in the process.

Also, two private-equity firms that had been looking closely at RCN's 424,000 subscribers have backed out of the auction, people familiar with the process said. The identity of those two private equity investors could not be determined by press time.

RCN spokesman Michael Houghton declined to comment. "We do not speculate on rumors," he said.

### WANTED A PEEK

Comcast was not considered to be a serious suitor for RCN and executives close to the company have denied its participation privately. Other cable executives familiar with the auction, though, said Comcast showed at least some preliminary interest in the overbuilder, mainly to get a look at RCN's books.

Several other private-equity firms could be in the running for RCN, but it's unlikely a deal could be reached before the end of the month. Now, people familiar with the auction said, a decision on whether to proceed with a sale probably won't be made until February or March.

According to some cable executives familiar with the situation, the auction has not entered the final bid stage yet.

RCN put itself on the block in September, hiring Blackstone Group and New York cable investment banker Waller Capital as advisers. At the time, RCN was said to be pursuing a dual-track strategy — an outright sale or, if bid prices came in too low, pursuit of smaller telephone companies to add to its portfolio.

### \$2,830 PLUS PER SUB

But Verizon must have had a change of heart. According to people familiar with the auction, prices of bids in the second stage have come in around \$1.2 billion to \$1.3 billion. That would value RCN at about \$2,830 to \$3,066 per subscriber.

It was thought that Verizon, which is rolling out its own video, voice and data product — FiOS — in several markets, could get a jump-start in its triple-play offering by acquiring RCN. While Verizon said it had about 118,000 video customers through its FiOS offering in the third quarter — expected to grow to 175,000 customers by the end of 2006 — they have mostly been in secondary markets. RCN's largest markets are in New York, Chicago, Boston and Washington, D.C.

Miller Tabak cable analyst David Joyce, while not having any specific knowledge of the auction process, said it makes sense if Comcast backed off, mainly because RCN would not provide much of a strategic advantage.

"Comcast doesn't need that kind of infrastructure," Joyce said. Comcast does not provide cable service in New York and already has a large presence in other RCN markets such as Boston, Chicago and Washington, D.C.

RCN has been showing strong growth for the past several quarters, so a sale is not critical to the company's overall financial health. But a run-up in RCN's stock price the past few months is largely due to deal speculation. RCN is up about 18% (\$4.69) since news it was considering a sale broke in September.

"They're in fine shape as a standalone," Joyce said of RCN. "But the stock will fall if a deal doesn't materialize soon."

### **Snapshot: RCN**

The biggest U.S. cable overbuilder by the numbers:

**Headquarters:** Herndon, Va.

**CEO:** Peter Aquino

**Revenue\*:** \$434.9 million

**Operating Loss\*:** \$69.2 million

**Share Price (Jan. 25):** \$29.78

**Markets Served:** Boston, New York, Eastern Pennsylvania, Washington, D.C., and Chicago

\* Nine months ended Sept. 30, 2006

**SOURCE:** RCN

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